

PATENT Atty. Docket: 0100024/0532135

Applicant:

Peter R. Chang et al.

: Paper No:

Serial No.

10/528,877

Group Art Unit:

Filed:

Examiner:

For:

EXTRACTION, PURIFICATION AND CONVERSION OF FLAVONOIDS FROM

PLANT BIOMASS

INFORMATION DISCLOSURE STATEMENT

Mail Stop AMENDMENT Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 C.F.R. §§ 1.97 and 1.98, Applicant herewith submits certain patent references and other information, which the Patent & Trademark Office may wish to consider in examining the above-identified application. The references are listed below, and are also listed on the attached Form PTO-1449.

U.S. Patent Documents	Publication Date	Patentee/Applicant
US- 3,382,475	08-28-1974	Zirlin
US- 5,122,381	06-16-1992	Nishimura et al.
US- 5,145,781	09-08-1992	Suzuki et al.
US- 5,565,435	10-15-1996	Yoneyama et al.

Foreign Patent Documents	Publication Date	Patentee/Applicant
WO 00-026400	05-11-2000	Merck Patent GmbH
WO 01-51482	07-19-2001	Biorex Health Ltd.
WO 01-59143	08-16-2001	Merck Patent GmbH
CN 1160048	09-24-1997	Zhai Guangyu
EP 0 387 042	02-15-1995	Kabushiki Kaisha Hayashibara Seibutsu Kagaku Kenkyujo
EP 0 420 376	03-13-1996	11
JP 6128142	05-10-1994	Kose Corp.
JP 02073079	03-13-1990	Daicel Chemical



Serial No. 10/528,877

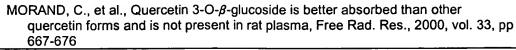
03-02-1992	San-Ei Kaguku Kogyo
03-02-1992	San-Ei Kaguku Kogyo
01-25-1994	Omiya Yakugyo; Ito Midori
09-06-1994	SII Techno Res Yugen;
	Nakayama Tsutomu
12-12-1995	Nippon Getsuto
04-08-1997	San Ei Gen FFI Inc.
09-10-1992	Merck
05-24-1995	Backhaus
06-01-1995	Backhaus
02-15-1982	Sechnov, I.M. Medical Institute
09-24-1997	Peopl. Rep. China
05-26-1999	Huo Xingling
	03-02-1992 01-25-1994 09-06-1994 12-12-1995 04-08-1997 09-10-1992 05-24-1995 06-01-1995 02-15-1982 09-24-1997

Non Patent Literature Documents

- GRIFFITH, JR., J. et al., Effect of rutin on increased capillary fragility in man, Proc. Soc. Exptl. Biol. Med., 1944, vol. 55, pp 228-229
- HUMPHREYS, F.R., The occurrence and industrial production of rutin in southeastern Australia, Economic Botany, 1964, vol. 18, 195-253
- GRIFFITHS, L.A.. & BARROW, A., Metabolism of flavonoid compounds in germ-free rats, Biochem. J., 1972, vol. 130, pp 1161-1162
- UYETA, M., et al., Mutagenicity of hydrolysates of tea infusions, Mutation Research, 1981, vol. 88, pp 233-240
- BASARKAR, P.W. & NATH, N., Cholesterol lowering action of vitamin P-like compounds in rats, Indian Journal of Experimental Biology, Aug. 1981, vol. 19, pp 787-789
- KATO, N., et al., Effects of dietary quercetin on serum lipids, Agric. Biol. Chem., 1983, vol. 47, no. 9, 2119-2120
- PROCHAZKA, V., Can wild buckwheat be a commercial source, Naše Liečivé Rastliny, 1985, vol. 22, pt. 5, pp 131-133
- MATSUBARA, Y., et al., Structure and Hypotensive Effect of Flavonoid Glycosides in *Citrus unshiu* peelings, Agric. Biol. chem., 1985, vol. 49, no. 4, pp 909-914
- BORS, W., et al., [36] Flavonoids as antioxidants, Methods in Enzymology, 1990, vol. 186, pp 343-355, Academic Press
- HAYASHIBARA BIOCHEMICAL LABORATORIES INC., Water soluble rutin functioning as vitamin P, Japan Report Medical Technology, Feb. 1990, vol. 4, no. 2,
- HAYASHIBARA BIOCHEMICAL LABORATORIES INC., Water soluble rutin, New Technology and Products, JETRO, Feb. 1990, p. 34
- IWATA, K., et al., Effects of kangra buckwheat on spontaneously hypertensive rats, 1990, vol. 21, pp 55-61
- YILDIZOĞLU-ARI, N., et al. Pharmacological effects of rutin, Phytotherapy Research, 1991, vol. 5, no. 1, pp 19-23
- ABOU-KARAM, M. & SHIER, W., Isolation and characterization of an antiviral flavonoid from *Waldsteinia fragarioides*, Journal of Natural Products, Oct. 1992, vol. 55, no. 10, pp 1525-1527
- DESCHNER, E., Dietary quercetin and rutin, inhibitors of experimental colonic neoplasia, Ch. 19, Phenolic Compounds in Food and Their Effects on Health II, 1992, ACS Symposium Series 507, American Chemical Society, Washington, DC



- LUTTERODT, G.D. & ABU RAIHAN, S.M., Calcium modulation and antinociceptive efficacy of quercetin compounds, Asia Pacific Journal of Pharmacology, 1993, vol. 8, pp 127-131
- AGULLO, G., et al., Quercetin exerts a preferential cytotoxic effect on active dividing colon carcinoma HT29 and Caco-2 cells, Cancer Letters, 1994, vol. 87, pp 55-63
- MIDDLETON, JR., E. & KANDASWAMI, C, The impact of plant flavonoids on mammalian biology: implications for immunity, inflammation and cancer, The Flavonoids: Advances in Research Since 1986, Harborne, J.B., ed., 1994, Ch. 15, pp 619-652, Chapman & Hall, London
- PISHA, E. & PEZZUTO, J., Fruits and vegetables containing compounds that demonstrate pharmacological activity in humans, Economic and Medicinal Plant Research, 1994, vol. 6, pp 189-233, Wagner & Farnsworth, ed., Academic Press, London
- OOMAH, D & MAZZA, G., Flavonoids and antioxidative activities in buckwheat, J. Agri. Food Chem., 1996, vol. 44, no. 7, pp 1746-1750
- MANACH, C., Bioavailability, metabolism and physiological impact of 4-oxoflavonoids, Nutrition Research, 1996, vol. 16, no. 3, pp 517-544
- FERRY, D., et al., Phase I clinical trial of the flavonoid quercetin: pharmacokinetics and evidence for *in vivo* tyrosine kinase inhibition, Clinical Cancer Research, April 1996, vol. 2, pp 659-668
- AGULLO, G., et al., Relationship between flavonoid structure and inhibition of phosphatidylinositol 3-kinase: a comparison with tyrosine kinase and protein kinase C inhibition, Biochemical Pharmacology, 1997, vol. 53, pp 1649-1657
- WATANABE, J., et al., Isolation and identification of *α*-glucosidase inhibitors from tochu-cha (*Eucommia almoides*), Biosci. Biotech. Biochem., 1997, vol. 1, no. 1, pp 177-178
- MANACH, C., et al., Quercetin is recovered in human plasma as conjugated derivatives which retain antioxidant properties, FEBS Letters, 1998, vol. 426, pp 331-336
- MINAMI, M., et al., Quantitative analysis of rutin in buckwheat (Fagopyrum sp.) by high performance liquid chromatography, Journal of the faculty of agriculture, 1998, vol. 34, no. 2, pp 91-95, Shinshu University, Minamiminowa, Nagano, Japan
- MORAND, C., et al., Plasma metabolites of quercetin and their antioxidant properties, Am J. Physiol., 1998, vol. 275, pp R212-R219
- NOROOZI, M., et al., Effects of flavonoids and vitamin C on oxidative DNA damage to human lymphocytes¹⁻³, Am. J. Clin. Nutr., 1998, vol. 67, pp 1210-1218
- CRESPY, V., et al., Part of quercetin absorbed in the small intestine is conjugated and further secreted in the intestinal lumen, Am. J. Physiol. 1999, vol. 277, pp G120-G126
- ASHIDA, H., et al., Flavones and flavonols at dietary levels inhibit a transformation of aryl hydrocarbon receptor induced by dioxin, FEBS Letters, 2000, vol. 476, pp 213-217
- BORRELLI, F. & IZZO, A., The plant kingdom as a source of anti-ulcer remedies, Phytother. Res., 2000, vol. 14, pp 581-591
- CALTAGIRONE, S., ET AL., Flavonoids apigenin and quercetin inhibit melanoma growth and metastatic potential, Int. J. Cancer, 2000, vol. 87, 595-600
- GEE, J., et al., Intestinal transport of quercetin glycosides in rats involves both deglycosylation and interaction with the hexose transport pathway, J. Nutri., 2000, vol. 130, pp 2765-2771



SKIBOLA, C & SMITH, M., Potential health impacts of excessive flavonoid intake, Free Radical Biology & Medicine, 2000, vol. 29, nos. 3-4, pp 376-383

SLOLEY, B., et al., Chemical and pharmacological evaluation of Hypericum perforatum extracts, Acta Pharmacol Sin, Dec. 2000, vol. 21, no. 12, pp 1145-1152

WANG, H., The therapeutic potential of flavonoids, Exp. Opin. Invest. Drugs, 2000, vol. 9, no. 9, pp 2103-2119

YEŞILADA, E., et al., Isolation and characterization of free radical scavenging flavonoid glycosides from the flowers of Spartum junceum by activity-guided fractionation, Journal of Ethnopharmacology, 2000, vol. 73, pp 471-478

ISHIGE, K., et al., Flavonoids protect neuronal cells from oxidative stress by three distinct mechanisms, Free Radical Biology & Medicine, 2001, vol. 30, no. 4, pp. 433-446

VALERIO, L.G., et al., Induction of human NAD(P)H:quinone oxidoreductase (NQO1) gene expression by the flavonol quercetin, Toxicology Letters, 2001, vol. 119, pp

Copies are provided of foreign patent reference and non-patent literature documents. A copy of the International Search Report from corresponding PCT Application PCT/CA03/01453 is enclosed for the Examiner's convenience. No representation is made or intended that a prior art search has been made or that no better art than the listed is available. It is respectfully requested that the information be considered by the Examiner and made of record in the present application.

CERTIFICATE OF MAILING

I hereby certify that a copy of this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

Respectfully submitted,

Peter R. Chang et al.

Registration No. 28,079

FROST BROWN TODD LLC 2200 PNC Center 201 East Fifth Street Cincinnati, Ohio 45202-4182 Telephone (513) 651-6131

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Examiner initials	Cite No.			MENT NUMBER nd code ² (if known)	Publication Date MM-DD-YYYY	Name of Patente Applicant of Cited De		Pages, Columns, Lines, N Relevant Passages or Re Figures Appear	Where elevant
		US-		32,475	08-28-1974	Zirlin			
		US-		22,381	06-16-1992	Nishimura et al.			
		US-		15,781	09-08-1992	Suzuki et al.			
		US-		55,435	10-15-1996	Yoneyama et al.			
				FORE	IGN PATENT DO	CUMENTS			
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		WO 00		400	05-11-2000	Merck Patent Gr	mbH	p. p 13-15	1
	İ	WO 01			07-19-2001	Biorex Health Lt		p. 6, claim 27	1
		WO 01	-5914	43	08-16-2001	Merck Patent Gr	nbH	p. 3, 8, 30, claims 1-4	1
		CN 116	30048	3	09-24-1997	Zhai Guangyu			At
		EP 0 3	87 04	2	02-15-1995	Kabushiki Kaish Hayashibara Seibutsu Kagaki Kenkyujo			
		EP 0 4	20 37	' 6	03-13-1996	"			
		JP 612			05-10-1994	Kose Corp.			Ab
		JP 020			03-13-1990	Daicel Chemical			Ab
		JP 040	6609	6	03-02-1992	San-Ei Kaguku Kogyo			Ab
		JP 040	6609	8	03-02-1992	San-Ei Kaguku Kogyo			Ab
		JP 601	4746		01-25-1994	Omiya Yakugyo; Midori	Ito		Ab

EXAMINER SIGNATURE

DATE CONSIDERED

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter office that issued the document, by the two-letter code (WIPO Standard ST. 3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Substitut	e for F	orm PTO	1449					_	
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<u> </u>	T	JP 624	19267		09-06-1994	SII Techno Res			Ab.
		JF 022	+0201		09-00-1994	Yugen; Nakayar Tsutomu	'na		AU.
	<u> </u>	JP 073	32403	7	12-12-1995	Nippon Getsuto			
		JP 909			04-08-1997	San Ei Gen FFI	Inc.		Ab.
	 	DE 41			09-10-1992	Merck			Ab.
		DE 43			05-24-1995	Backhaus			Ab.
		DE 43			06-01-1995	Backhaus			Ab.
		SU 90	4709		02-15-1982	Sechnov, I.M. Medical Institute	!		Ab
		CN 11	60048	}	09-24-1997	Peopl. Rep. Chir	na		Ab.
		CN 12	17329)	05-26-1999	Huo Xingling			Ab.
			ОТНІ	ER REFERENCES	- NON PATENT	LITERATURE DO	CUMI	ENTS	
Examiner initials	Cite No.	n	nagazir	e, journal, serial, symp	osium, catalog, etc.), o country v	late, page(s), volume-is vhere published	sue nu	te), title of the item (book, mber(s), publisher, city and/or	T ⁶
		Biol.	. Med.	, 1944, vol. 55, pp	228-229			an, Proc. Soc. Exptl.	
				S, F.R., The occurr Botany, 1964, vol.		al production of rut	in in s	outheastern Australia,	
		GRIFFI	THS,		A., Metabolism of	flavonoid compou	nds in	germ-free rats,	
		UYETA		t al., Mutagenicity		tea infusions, Mut	ation	Research, 1981, vol. 88,	
		BASAR	KAR,	P.W. & NATH, N.,	Cholesterol lower	ing action of vitami	in P-lil	ke compounds in rats,	
		India	an Jol	urnal of Experiment	iai Biology, Aug. 1	981, vol. 19, pp 78	11-185	hem., 1983, vol. 47,	
		no. 9	9, 211	9-2120	, ,				
		i .		A, V., Can wild buc op 131-133	kwheat be a comn	nercial source, Nas	še Lie	čivé Rastliny, 1985, vol.	
		MATSU	BARA	A, Y., et al., Structu		ve Effect of Flavon		ycosides in Citrus	
<u> </u>	, ,					49, no. 4, pp 909-9		4000 val 400 ==	
				: al., เชื่อ] Flavonoid Academic Press	s as antioxidants,	wethods in Enzym	iology	v, 1990, vol. 186, pp	

DATE CONSIDERED

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter office that issued the document, by the two-letter code (WIPO Standard ST. 3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLUSURE STATEMENT BY APPLICANT		Comple	te if Known		
	(use as many sheets as necessary)		Application No.	10/528,877	
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				Examiner Name	
Shoot	3	01	4	Attorney Docket No.	10872/0527117

	HAYASHIBARA BIOCHEMICAL LABORATORIES INC., Water soluble rutin functioning as
	vitamin P, Japan Report Medical Technology, Feb. 1990, vol. 4, no. 2,
	HAYASHIBARA BIOCHEMICAL LABORATORIES INC., Water soluble rutin, New Technology and
	Products, JETRO, Feb. 1990, p. 34
	IWATA, K., et al., Effects of kangra buckwheat on spontaneously hypertensive rats, 1990, vol. 21, pp 55-61
	YILDIZOĞLU-ARI, N., et al. Pharmacological effects of rutin, Phytotherapy Research, 1991, vol. 5, no. 1, pp 19-23
	ABOU-KARAM, M. & SHIER, W., Isolation and characterization of an antiviral flavonoid from Waldsteinia fragarioides, Journal of Natural Products, Oct. 1992, vol. 55, no. 10, pp 1525-1527
	DESCHNER, E., Dietary quercetin and rutin, inhibitors of experimental colonic neoplasia, Ch. 19, Phenolic Compounds in Food and Their Effects on Health II, 1992, ACS Symposium Series 507, American Chemical Society, Washington, DC
	LUTTERODT, G.D. & ABU RAIHAN, S.M., Calcium modulation and antinociceptive efficacy of quercetin compounds, Asia Pacific Journal of Pharmacology, 1993, vol. 8, pp 127-131
	AGULLO, G., et al., Quercetin exerts a preferential cytotoxic effect on active dividing colon carcinoma HT29 and Caco-2 cells, Cancer Letters, 1994, vol. 87, pp 55-63
	MIDDLETON, JR., E. & KANDASWAMI, C, The impact of plant flavonoids on mammalian biology: implications for immunity, inflammation and cancer, The Flavonoids: Advances in Research Since 1986, Harborne, J.B., ed., 1994, Ch. 15, pp 619-652, Chapman & Hall, London
	PISHA, E. & PEZZUTO, J., Fruits and vegetables containing compounds that demonstrate pharmacological activity in humans, Economic and Medicinal Plant Research, 1994, vol. 6, pp 189-233, Wagner & Farnsworth, ed., Academic Press, London
	OOMAH, D & MAZZA, G., Flavonoids and antioxidative activities in buckwheat, J. Agri. Food Chem., 1996, vol. 44, no. 7, pp 1746-1750
	MANACH, C., Bioavailability, metabolism and physiological impact of 4-oxo-flavonoids, Nutrition Research, 1996, vol. 16, no. 3, pp 517-544
	FERRY, D., et al., Phase I clinical trial of the flavonoid quercetin: pharmacokinetics and evidence for <i>in vivo</i> tyrosine kinase inhibition, Clinical Cancer Research, April 1996, vol. 2, pp 659-668
	AGULLO, G., et al., Relationship between flavonoid structure and inhibition of phosphatidylinositol
1	3-kinase: a comparison with tyrosine kinase and protein kinase C inhibition, Biochemical
	Pharmacology, 1997, vol. 53, pp 1649-1657
	WATANABE, J., et al., Isolation and identification of α -glucosidase inhibitors from tochu-cha
	(Eucommia almoides), Biosci. Biotech. Biochem., 1997, vol. 1, no. 1, pp 177-178

EXAMINER	SIGNATURE
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DATE CONSIDERED

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter office that issued the document, by the two-letter code (WIPO Standard ST. 3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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	MANACH, C., et al., Quercetin is recovered in human plasma as conjugated derivatives which	
	retain antioxidant properties, FEBS Letters, 1998, vol. 426, pp 331-336	
	MINAMI, M., et al., Quantitative analysis of rutin in buckwheat (Fagopyrum sp.) by high	
	performance liquid chromatography, Journal of the faculty of agriculture, 1998, vol. 34, no. 2,	
	pp 91-95, Shinshu University, Minamiminowa, Nagano, Japan	
	MORAND, C., et al., Plasma metabolites of guercetin and their antioxidant properties, Am J.	
	Physiol., 1998, vol. 275, pp R212-R219	
	NOROOZI, M., et al., Effects of flavonoids and vitamin C on oxidative DNA damage to human	
1	lymphocytes ¹⁻³ , Am. J. Clin. Nutr., 1998, vol. 67, pp 1210-1218	
	CRESPY, V., et al., Part of guercetin absorbed in the small intestine is conjugated and further	
	secreted in the intestinal lumen, Am. J. Physiol. 1999, vol. 277, pp G120-G126	
	ASHIDA, H., et al., Flavones and flavonols at dietary levels inhibit a transformation of aryl	
	hydrocarbon receptor induced by dioxin, FEBS Letters, 2000, vol. 476, pp 213-217	
<u>-</u>	BORRELLI, F. & IZZO, A., The plant kingdom as a source of anti-ulcer remedies, Phytother. Res.,	
	2000, vol. 14, pp 581-591	
	CALTAGIRONE, S., ET AL., Flavonoids apigenin and quercetin inhibit melanoma growth and	
j	metastatic potential, Int. J. Cancer, 2000, vol. 87, 595-600	
	GEE, J., et al., Intestinal transport of quercetin glycosides in rats involves both deglycosylation	
	and interaction with the hexose transport pathway, J. Nutri., 2000, vol. 130, pp 2765-2771	
	MORAND, C., et al., Quercetin 3-O-β-glucoside is better absorbed than other quercetin forms and	
	is not present in rat plasma, Free Rad. Res., 2000, vol. 33, pp 667-676	
	SKIBOLA, C & SMITH, M., Potential health impacts of excessive flavonoid intake, Free Radical	
	Biology & Medicine, 2000, vol. 29, nos. 3-4, pp 376-383	
	SLOLEY, B., et al., Chemical and pharmacological evaluation of <i>Hypericum perforatum</i> extracts,	
	Acta Pharmacol Sin, Dec. 2000, vol. 21, no. 12, pp 1145-1152	
	WANG, H., The therapeutic potential of flavonoids, Exp. Opin. Invest. Drugs, 2000, vol. 9, no. 9,	
	pp 2103-2119	
	YEŞILADA, E., et al., Isolation and characterization of free radical scavenging flavonoid	
	glycosides from the flowers of Spartum junceum by activity-guided fractionation, Journal of	
	Ethnopharmacology, 2000, vol. 73, pp 471-478	
	ISHIGE, K., et al., Flavonoids protect neuronal cells from oxidative stress by three distinct	
	mechanisms, Free Radical Biology & Medicine, 2001, vol. 30, no. 4, pp 433-446	
	VALERIO, L.G., et al., Induction of human NAD(P)H:quinone oxidoreductase (NQO1) gene	
- 1	expression by the flavonol quercetin, Toxicology Letters, 2001, vol. 119, pp 49-57	

EXAMINER SIGNATURE

DATE CONSIDERED

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter office that issued the document, by the two-letter code (WIPO Standard ST. 3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.